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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/551,339	09/14/2006	Ilias Manettas	2003P00537WOUS	4621

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EXAMINER	
COX, ALEXIS K	

ART UNIT	PAPER NUMBER
3744	

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12/22/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/551,339	MANETTAS ET AL.	
	Examiner	Art Unit	
	ALEXIS K. COX	3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 September 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *9/29/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: on page 3 of the specification, reference is made to claims which have been cancelled.

Appropriate correction is required.

Claim Objections

2. Claim 20 is objected to because of the following informalities: the term "in refrigeration device" on lines 1-2 of claim 20 should be altered to "in a refrigeration device" for increased clarity of the claim. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 11, 15-18, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Tilmanis (US Patent No. 3,839,878).

Regarding claims 11, 15, and 16, Tilmanis discloses a refrigeration device, comprising a thermally insulating housing (10, see column 3 line 53, see also figure 1) enclosing an inner chamber (14, see column 3 lines 54-55) and an evaporator arranged in said housing (18, see column 3 lines 59-60) separated

from the inner chamber, the evaporator being in an air passage separated from and communicating with the inner chamber, as without the air passage the inner chamber would not be cooled by the evaporator; a pair of temperature sensors (36, 38, see column 4 line 10) placed in the vicinity of the evaporator such that for a given thickness of the ice layer only one of the temperature sensors is embedded in the ice layer (see column 4 lines 17-19), the temperature sensors constituting a measuring device arranged in the air passage to provide a measured signal representative of the air flow through the air passage; a heating device for heating the evaporator (see column 3 lines 63-65); and a monitoring and control circuit connected to the pair of temperature sensors (see column 4 lines 30-41) which determines the difference between the temperature values detected by the pair of temperature sensors and activates the heating device when the temperature difference exceeds a predetermined value (see column 4 lines 42-47).

Regarding claims 17-18, the refrigeration device of Tilmanis further has a first sensor arranged directly on the surface of the evaporator (36, see column 4 lines 17-18).

Regarding claim 20, Tilmanis discloses a refrigeration device, comprising a thermally insulating housing (10, see column 3 line 53, see also figure 1) enclosing an inner chamber (14, see column 3 lines 54-55) and an evaporator arranged in said housing (18, see column 3 lines 59-60) separated from the inner chamber, the evaporator being in an air passage separated from and communicating with the inner chamber, as without the air passage the inner

chamber would not be cooled by the evaporator; a heating device for heating the evaporator (see column 3 lines 63-65); and a monitoring and control circuit (see column 4 lines 30-41) which estimates an air flow through the air passage in which the evaporator is arranged by determining the difference between the temperature values detected by a pair of temperature sensors (36, 38, see column 4 line 10) and triggers a defrosting process by activating the heating device when the temperature difference exceeds a predetermined value (see column 4 lines 42-47), which is when the estimated air flow falls below a predetermined threshold value.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that

the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 12-14 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tilmanis (US Patent No. 3,839,878).

Regarding claims 12-14, it is noted that Tilmanis does not explicitly disclose the measuring device to comprise a body driven to move by air flow in the passage and a sensor to record the movement of the body, an elastic element which can be deflected from a rest position by the air flow in the passage and a sensor recording the deflection of the element, or a pressure sensor measuring a dynamic air pressure in the air passage. However, a simple substitution does not render claims patentable over prior art, and it would have been obvious to one of ordinary skill in the art at the time of the invention to implement any of these sensors in place of the paired temperature sensors disclosed by Tilmanis in order to simplify construction by requiring only a single sensor.

Regarding claim 19, it is noted that Tilmanis does not explicitly disclose the second temperature sensor to be arranged on an output of the channel terminating in the inner chamber. However, it would have been an obvious

mechanical expedient to one of ordinary skill in the art at the time of the invention to rearrange the existing parts to place the second temperature sensor on an output of the channel terminating in the inner chamber in order to ensure that the temperature sensed by the second temperature sensor is not rendered inaccurate by proximity to frozen items in the freezer.

Double Patenting

9. Claims 11-20 of this application conflict with claims 10-12 and 17 of Application No. 10/551561. 37 CFR 1.78(b) provides that when two or more applications filed by the same applicant contain conflicting claims, elimination of such claims from all but one application may be required in the absence of good and sufficient reason for their retention during pendency in more than one application. Applicant is required to either cancel the conflicting claims from all but one application or maintain a clear line of demarcation between the applications. See MPEP § 822.

Regarding claim 11, '561 claims a refrigeration device, comprising: a thermally insulating housing, said thermally insulating housing enclosing an inner chamber (lines 1-4 of claim 10); said thermally insulating housing enclosing an evaporator arranged in an air passage separated from and communicating with said inner chamber (lines 4-5 of claim 10 and 2-4 of claim 12); a heating device for heating said evaporator (line 12 of claim 10); a control circuit for controlling the operation of said heating device (see lines 13-14 of claim 10); a measuring device arranged in said air passage to provide a measured signal representative

of the air flow through said air passage (see lines 8-11 of claim 10); and said control circuit coupled to said measuring device air flow signal, said control circuit enabled to bring said heating device into operation when the recorded air flow signal falls below a predetermined threshold value (see lines 15-19 of claim 10).

Regarding claims 15-18, '561 claims said measuring device to include two temperature sensors (see line 8 of claim 10) which are thermally differently closely coupled to at least one of a heat source and a heat sink (see lines 8-11 of claim 10) and the air in said passage indicative of air flow speed and said control circuit determines a fall below threshold value when the difference between the temperatures recorded by the two sensors exceeds said threshold value.

Regarding claim 20, '561 claims a method for controlling the defrosting of an evaporator in a refrigeration device said refrigeration device comprising a thermally insulating housing (see lines 1-2 of claim 17); said thermally insulating housing enclosing an inner chamber (see lines 3-4 of claim 17); said thermally insulating housing enclosing an evaporator arranged in an air passage separated from and communicating with said inner chamber (see lines3-5 of claim 17); a heating device for heating said evaporator (see line 12 of claim 17); and a control circuit for controlling the operation of said heating device (see lines 13-14 of claim 17); said method comprising the following steps: estimating air flow through said air passage in which said evaporator is arranged (see lines 17-20); and triggering a defrosting process when the estimated air flow falls below a predetermined threshold value (see lines 21-23 of claim 17).

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Auracher (US Patent No. 3,726,105) discloses a control arrangement for automatically defrosting a refrigerator, as does Howland (US Patent No. 3,726,104). Nonomaque (US Patent No. 2,907,181) discloses a hot gas refrigerating system with multiple temperature sensors near the evaporator. Davis et al (US Patent application Publication no. 2001/0054292) discloses a control system an related methods for refrigeration and freezer units, including multiple temperature sensors at varying locations relative to the evaporator used in defrost control. Jauvert (US Patent No. 1,496,676) discloses a refrigerating plant with automatic temperature regulation. Mueller et al (US Patent No. 4,209,994) discloses a heat pump system defrost control with microprocessor. Abraham (US Patent No. 4,265,090) discloses a refrigerator with ambient air used to defrost. Morita et al (US Patent No. 7,150,158) discloses a freezing prevention system for a refrigerator which uses air flow control as part of the system. And Davis (US Patent No. 6,260,365) explicitly expresses that lack of air flow caused by ice buildup is a cause of inefficient operation of refrigeration systems.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEXIS K. COX whose telephone number is (571)270-5530. The examiner can normally be reached on Monday through Thursday 8:00a.m. to 5:30p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler or Frantz Jules can be reached on 571-272-4834 or 571-272-6681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/AKC/

/Frantz F. Jules/
Supervisory Patent Examiner, Art Unit 3744